

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT			1. CONTRACT ID CODE J	PAGE 1 OF 2 PAGES
2. AMENDMENT/MODIFICATION NO. 0006	3. EFFECTIVE DATE 05 August 2002	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. (If applicable)	
6. ISSUED BY U.S. ARMY ENGINEER DISTRICT, ALBUQUERQUE CORPS OF ENGINEERS 4101 JEFFERSON PLAZA, N.E. ALBUQUERQUE, NEW MEXICO 87109-3435	CODE	7. ADMINISTERED BY (If other than Item 6)	CODE	
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)			(<input checked="" type="checkbox"/>) 9A. AMENDMENT OF SOLICITATION NO. DACA47-02-R-0004	
			(<input checked="" type="checkbox"/>) 9B. DATED (SEE ITEM 11) 05 February 2002	
			10A. MODIFICATION OF CONTRACTS/ORDER NO.	
			10B. DATED (SEE ITEM 13)	
CODE	FACILITY CODE			

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☒ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended, ☒ is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:

(a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

**13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS,
IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.**

(<input checked="" type="checkbox"/>)	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor ☐ is not, ☐ is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

PROJECT: TWO PHASE DESIGN/BUILD, TELESCOPE ATMOSPHERE COMPENSATION LABORATORY, KIRTLAND AIR FORCE BASE, NEW MEXICO

1. This is Amendment No. 6 to Solicitation No. DACA47-02-R-0004; 05 February 2002. The following revisions shall be incorporated into the specifications. All other provisions shall remain unchanged.

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)	
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
(Signature of person authorized to sign)		BY (Signature of Contracting Officer)	

2. SPECIFICATIONS: Delete the following listed pages and substitute the pages attached hereto. On the revised pages, for convenience, changes are emphasized by the amendment number in parentheses before and after changes from the previous issue. All portions of the revised (or new) pages shall apply whether or not changes have been indicated.

Delete Page

Insert Page

Volume 1 of 3

01010-61 thru 01010-62
01010-73
01010-96a

01010-61 thru 01010-62
01010-73
01010-96a

3. REVISIONS TO APPENDIX B, CHARETTE REPORT: Attached are one page of revisions to the mechanical requirements in the detailed space descriptions of Appendix B and are to be incorporated into Appendix B.

/////////LAST ITEM/////////

due to the high air rate required and the intermittent interior load. HVAC designs shall consider the effects of elevation in sizing equipment and ductwork. Placement of hvac equipment within the facility shall be coordinated with the architectural floor plans to insure proper clearances around all equipment can be achieved within the allotted floor area. Mechanical room areas shall be increased or decreased as needed to maintain the manufacturers recommended minimum service clearances and the clearances required for removal of the equipment. Ventilation (fresh) air requirements shall be in accordance with ASHRAE 62 (latest edition). Pressure classifications of ductwork shall be shown on the drawings, using the convention described in the SMACNA HVAC Systems Duct Design Manual.

7.3.2 Air Handling System Design.

7.3.2.1 **Office and Support Areas.** The first and second floor office and support areas (toilets, storage rooms, kitchens, hallways, etc.) shall be served by a minimum of one chilled/hot water air-handling unit per floor with variable air volume (vav) terminal units serving individual building zones.

7.3.2.1.1 **Non-Secure Areas.** Air handling systems and controls for these spaces shall maintain the space temperature to within 1.7° C (3° F) of set point. Individual vav boxes shall be provided to serve zones covering up to a maximum of 56 m² (600 ft²) in the large open office areas, and a maximum of 42 m² (450 ft²) in the hard-walled office areas or a maximum of two hard walled offices, whichever is less. In addition, each individual office and conference room with areas greater than 28 m² (300 ft²) will have its own vav box. All vav boxes will be supplied with a supplementary hot water heating coil.

7.3.2.1.2 **Secure Areas.** Secure areas shall not be served by vav boxes that serve the non-secure areas. Air handling systems and controls for these spaces shall maintain the space temperature to within 1.7° C (3° F) of set point. Individual vav boxes shall be provided to serve zones (excluding server rooms) covering up to a maximum of 37 m² (400 ft²) in the large open office areas, and a maximum of 32 m² (350 ft²) in the hard-walled office areas or a maximum of two hard walled offices, whichever is less. In addition, each individual office and conference room with areas greater than 28 m² (300 ft²) will have its own vav box. All vav boxes will be supplied with a supplementary hot water heating coil. All equipment and ductwork serving the secure areas of the facility shall fully comply with the requirements indicated in the DCID manual. Where two separate secure rooms are served by a single terminal unit, the designer shall insure that proper sound separation is made between the two spaces (coordinate with Architectural to acquire the required sound levels). Sound separation between spaces shall fully comply with the requirements indicated in the DCID manual.

7.3.2.2 **Optics Laboratories.** Each laboratory shall be served by separate, individual, chilled/hot water, constant or variable air volume air-handling units. Constant volume units shall be used only when the calculated space sensible cooling airflow is within 20 percent of the airflow required to maintain the clean room classification. When required, units will be supplied with a hot water pre-heat or re-heat coil. All laboratories shall be designed to maintain a Class 10,000 clean room environment. Air handling systems and controls for these spaces shall maintain the space temperature to within 0.6° C (1° F) of set point. The air handling units serving these spaces shall be sized to include an internal equipment sensible heat gain equivalent to 100 percent of the connected electrical load (as defined in paragraph 8.3.8.5.1) provided for the space minus the process chilled water load in the space.

- (5) 7.3.2.3 **Class 100,000 Clean Room Laboratories.** All Class 100,000 laboratories shall be served by a minimum of three chilled/hot water air-handling units with variable air volume (vav) terminal units serving individual building zones. Each laboratory, including associated work areas (cut outs) as indicated, shall be served by individual vav boxes. Air handling system and controls for these spaces shall be designed to maintain a Class 100,000 clean room environment and shall maintain the space temperatures to within 1.7° C (3° F) of set point. The air handling units serving these spaces shall be sized to include an internal equipment sensible heat gain equivalent to 100 percent of the connected electrical load (as defined in paragraph 8.3.8.5.1) provided for the space, minus the process chilled water load in the space. Individual vav air handling units shall be provided to serve zones covering up to a maximum of 362 m² (3900 ft²). All vav boxes will be supplied with a supplementary hot water heating coil. Provide pre-heat coils in air handling units when required. (6) (5)
- (5) 7.3.2.4 **Coating Facility.** Coating facility shall be served by a dedicated chilled/hot water air-handling unit with variable air volume (vav) terminal units serving the building zones. Air handling system and controls for this space shall maintain the space temperature to within 2.8° C (5° F) of set point. The air handling units serving these spaces shall be sized to include an internal equipment sensible heat gain equivalent to 70 percent of connected electrical load (as defined in paragraph 8.3.8.5.1) provided for the space. (6) (6)
- (6) 7.3.2.5 **Machine Shop.** Machine shop areas (including receiving area) shall be served by a dedicated chilled/hot water air-handling unit with variable air volume (vav) terminal units serving individual building zones. Individual vav boxes shall be provided to serve zones covering up to a maximum of 65 m² (700 ft²). All vav boxes will be supplied with a supplementary hot water heating coil. Air handling system and controls for this space shall maintain the space temperature to within 2.8° C (5° F) of set point. The air handling units serving these spaces shall be sized to include an internal equipment sensible heat gain equivalent to 100 percent of connected electrical load (as defined in paragraph 8.3.8.5.1) supplied to the space. (6) (6)
- (6) 7.3.2.6 **Server Rooms.** The secure and non-secure server/computer rooms will be served by individual ceiling mounted chilled/hot water or split system dx and hot water computer room air conditioning (CRAC) units with space mounted microprocessor controllers. The air conditioning units in the server rooms will be sized to include an internal equipment sensible heat gain equivalent to 100 percent of the connected electrical load (as defined in paragraph 8.3.8.5.1) provided for the space. (6) (6)
- 7.3.2.7 **Make-up Air Handling Units.** Outside air to all air handling units serving the spaces that are required to maintain a clean room environment shall be supplied by ceiling or floor mounted chilled/hot water make-up air units.
- 7.3.3 **Air Handling System Equipment and Accessories**
- (5) 7.3.3.1 **Air Handling Units.** Air handling units shall be as specified in Section 15895 - AIR SUPPLY, DISTRIBUTION, VENTILATION, AND EXHAUST SYSTEM. The air handling units shall be located in the interstitial spaces of the corridors and in the mechanical rooms. Units located in the mechanical rooms shall be mounted on isolated, reinforced concrete housekeeping pads with a 150 mm (6-inch) clear space from the unit to the edge of the pad. Provide the manufacturer's recommended service clearance or a minimum of 610 mm (24") clearance around the entire unit, whichever is greater. Units located in the interstitial spaces shall be floor or ceiling mounted (per architectural and structural design). The units, whether floor or ceiling mounted, shall be (5)

(6) 7.3.21 **Vibration and Noise Isolation.** All piping, ductwork, air handlers, pumps, exhaust fans, unit heaters and related equipment shall be properly isolated to prevent vibration and subsequent noise to 95% isolation (Transmissibility = 0.05). In addition, equipment pads for hvac equipment shall also be isolated from the building foundation and shall prevent vibration to 95% isolation (Transmissibility = 0.05). Designer shall provide supporting calculations and design details which validates that all vibration isolation measures taken are in compliance with the requirements in this RFP. (6)

7.3.22 **Seismic Design Requirements.** Protective measures shall be in accordance with UFGS 13080, UFGS 15070 and TI 5-809-04, Seismic Design for Buildings.

(6) 7.3.23 **Vacuum Pumps.** Provide all materials, labor, piping, electrical, supports, and appurtenances required to install the user supplied vacuum pump in the Coating Facility. Contractor and/or Designer shall coordinate the vacuum pump requirements with the user. Provide vacuum system coordination meeting notes and general information in the Design Analysis for review. (6)

(5) 7.3.24 Deleted.

(6) 7.3.25 **Laboratory Fume Hood System.** Provide a minimum of 600 cfm to each fume hood and solder station required in the "Detailed Space Descriptions indicated in Appendix B; however, quantities for fume hoods in the general labs shall be two (2) in lieu of four (4) as indicated in Appendix B. (5) (6)

7.4 **Heating, Ventilating, and Air Conditioning Control System.**

7.4.1 **Control System.** The Contractor shall be responsible for correct operation of the control system including, but not limited to, software, control relays, sensors, and control wiring. The Contractor shall provide a 40 hour training course in accordance with UFGS 15951.

a. Temperature Controls: Temperature controls shall be direct digital control and be designed per industry standards and in accordance with UFGS 15951 - Direct Digital Control for HVAC. Control drawings, schematics and I/O tables shall be provided during the design stages for review.

b. Direct Digital Controls: Control drawings shall include schematics, ladder diagrams and sequence of operation for all HVAC equipment. The DDC system shall include all application software and equipment to implement the control strategies that are contained in UFGS 15951 - Direct Digital Control

- (5) 8.3.8.5.1.1.1 **User Loads Definition.** The following list shall be the definition of "User Loads". For the purposes of equipment power supplies only, this list shall supersede those given in Appendix B and Appendix E.
- 8.3.8.5.1.1.1.1 **General Offices.** One (1) 20A, 120 Volt circuit per office, with a minimum of 4 duplex receptacles per office.
- (6) 8.3.8.5.1.1.1.2 **Coating Areas.** Three (3) 20A, 120 Volt circuits each, with a minimum of 7 duplex receptacles per circuit, spaces at not more than 15' intervals. One (1) 200A, 480 volt disconnect, and one (1) 100A, 208 Volt disconnect. (6)
- (6) 8.3.8.5.1.1.1.3 **Shop Areas.** Two (2) 20A, 120 Volt circuits each, with a minimum of 10 duplex receptacles per circuit. One (1) 100A, 480 volt disconnect, and one (1) 50A, 208 Volt disconnect. (6)
- 8.3.8.5.1.1.1.4 **Receiving Areas.** One (1) 20A, 120 Volt circuits each, with a minimum of 6 duplex receptacles per circuit.
- 8.3.8.5.1.1.1.5 **Sensor Suite.** One (1) 20A, 120 Volt "UPS" circuit per room. One (1) 50A, 208 Volt disconnect per suite.
- 8.3.8.5.1.1.1.6 **Spec Electronics.** One (1) 50A, 208 Volt disconnect per suite.
- 8.3.8.5.1.1.1.6.1 **Spec Electronics - Work Areas.** Two (2) 20A, 120 Volt circuits throughout the WAs.
- 8.3.8.5.1.1.1.6.2 **Spec Electronics - Lab Areas.** Two (2) 20A, 120 Volt circuits (one is UPS) throughout the Lab Areas.
- 8.3.8.5.1.1.1.7 **Gen. Electrical Suite.** One (1) 30A, 208 Volt disconnect per suite.
- 8.3.8.5.1.1.1.7.1 **Gen. Electrical Suite - Work Areas.** One (1) 20A, 120 Volt circuits throughout the WAs.
- 8.3.8.5.1.1.1.7.2 **Gen. Electrical SuiteSpec Electronics - Lab Areas.** Two (2) 20A, 120 Volt circuits (one is UPS) throughout the Lab Areas.
- 8.3.8.5.1.1.1.8 **Opto-Mech Lab.** Two (2) 20A, 120 Volt "UPS" circuits. One (1) 50A, 208 Volt disconnect.
- 8.3.8.5.1.1.1.9 **Opt Metrology/Storage Combo.** Two (2) 20A, 120 Volt circuits (one is UPS). One (1) 50A, 208 Volt disconnect.
- 8.3.8.5.1.1.1.10 **Laser Lab.** Two (2) 20A, 120 Volt circuits (one is UPS). One (1) 50A, 480 Volt disconnect, and one (1) 50A, 208 Volt disconnect.
- 8.3.8.5.1.1.1.11 **Wavefront Corrector Labs (Optic and Elec Lab).** Two (2) 20A, 120 Volt "UPS" circuits per lab. One (1) 50A, 208 Volt disconnect in the Optics Lab, and one (1) 50A, 208 Volt disconnect in the Elec Lab.
- 8.3.8.5.1.1.1.12 **Elec. Crib.** One (1) 20A, 120 Volt circuits.

**REVISIONS TO THE MECHANICAL REQUIREMENTS
IN THE DETAILED SPACE DESCRIPTION
OF APPENDIX B
THE CHARETTE REPORT**

ROOM ID	CHANGE REQUIRED
General Electronics Work Areas	Delete requirements for nitrogen gas, cooling, domestic water and compressed air drops.
Specialized Electronics Work Areas	Delete requirements for nitrogen gas, cooling, domestic water and compressed air drops.
Secure Multi-media Labs (Dark Rooms)	Delete requirement for nitrogen gas.